

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1 (currently amended): A method for determining an intraperitoneal volume during peritoneal dialysis, which comprising the steps of passing peritoneal solution from a peritoneal cavity in a first circuit adjacent a first side of a semipermeable membrane;

passing dialyzing fluid in a second circuit adjacent a second side of the semipermeable membrane;

measuring the concentration of an endogenous substance that passes through a peritoneum into the peritoneal solution in the peritoneal cavity; and

determining the intraperitoneal volume from the variation in the concentration over time.

2 (currently amended): The method according to claim 1, wherein the measuring step further comprises:

measuring the concentration  $c_0$  of the endogenous substance in the peritoneal solution at a time  $t_1$ ;

withdrawing or delivering a predetermined volume  $\Delta V$  of fluid in the first circuit;

measuring the concentration  $c_1$  of the endogenous substance in the peritoneal solution at a time  $t_2$ ; and

wherein the determining step further comprises:

determining the intraperitoneal volume from the equation:

$$V = \frac{\Delta V}{1 - c_0 / c_1}$$

3 (original): The method according to claim 2, which further comprises the step of:

determining an ultrafiltration rate  $V (t_1)/t_1$  from the variation in intraperitoneal volume in the time  $t_1 - t_2$ ;

withdrawing fluid from the first circuit at the ultrafiltration rate.

4 (original): The method according to claim 3, which further comprises the step of:

determining continuously the variation in intraperitoneal volume during peritoneal dialysis for determination of the ultrafiltration rate.

5 (original): The method according to claim 1, wherein the endogenous substance is albumin.

6 (withdrawn): An apparatus for peritoneal dialysis comprising:

a dialyzing fluid source;

a dialyzer, the dialyzer divided by a semipermeable membrane into a first compartment and a second compartment, where the first compartment is part of a first circuit for peritoneal solution and the second compartment is part of a second circuit for dialyzing fluid;

a balancer for withdrawing or delivering fluid in the first circuit;  
a measuring unit configured to determine the concentration of an endogenous substance in the peritoneal solution, which during peritoneal dialysis passes through the peritoneum into the peritoneal cavity; and  
a calculating and evaluation unit configured to determine the intraperitoneal volume from a variation in concentration of the endogenous substance.

7 (withdrawn): The apparatus according to claim 6, further comprising:

a control unit for controlling the balancer, the measuring unit, and the calculating and evaluation unit;  
wherein the control unit controls the measuring unit such that a first concentration  $c_0$  of the endogenous substance in the peritoneal solution is measured at time  $t_1$ , and a second concentration  $c_1$  of the endogenous substance in the peritoneal solution is measured at time  $t_2$ ; and  
wherein the control unit controls the balancer such that between time  $t_1$  and time  $t_2$  a predetermined volume  $\Delta V$  of fluid is withdrawn or delivered in the first circuit.

8 (withdrawn): The apparatus according to claim 7, wherein the control unit controls the calculating and evaluation unit to determine the intraperitoneal volume from the concentrations  $c_0$  and  $c_1$  and the volume  $\Delta V$ .

9 (withdrawn): The apparatus according to claim 7, wherein the calculating and evaluation unit is configured to determine a ultrafiltration rate  $V(t_1)/t_1$  from the variation in intraperitoneal volume in the time period from time  $t_1$  to time  $t_2$ , and wherein the control unit controls the balancer to withdraw or deliver fluid in the first circuit at the ultrafiltration rate.

10 (withdrawn): The apparatus of claim 6, wherein the endogenous substance is albumin.